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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/536,669

05/27/2005

Kazumi Nakayoshi

71,051-009

4704

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07/03/2008

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EXAMINER

LOEWE, ROBERT S

ART UNIT

PAPER NUMBER

1796

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/536,669	<b>Applicant(s)</b> NAKAYOSHI ET AL.	
	<b>Examiner</b> ROBERT LOEWE	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 May 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 5-10 and 17-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-10 and 17-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

Applicant's arguments/remarks, filed on 5/12/08, have been fully acknowledged.

#### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 5-10, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kleyer et al. (US Pat. 6,361,716).

Claims 5-9: Kleyer et al. teaches a curable silicone composition comprising: (A) an organopolysiloxane containing at least two silicon-bonded alkenyl groups per molecule (abstract), (B) an organohydrogenpolysiloxane having at least two silicon-bonded hydrogen atoms per molecule in an amount sufficient to cure the composition (abstract), (C) an electrically conductive filler such as silver (abstract), (D) an effective amount of a hydroxy-functional

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compound (abstract), such as hindered and unhindered phenols (6:33-7:3), and (E) a catalytic amount of a platinum hydrosilation catalyst (abstract). Kleyer et al. further teaches that the amount of electrically conductive filler can be present from 15 to about 80% by volume, which partially encompasses the claimed range of component (C) of instant claim 1. Kleyer et al. further teaches that component (B) is added such that there are from 0.5 to 5.0 mol of Si-H groups per mol of Si-alkenyl groups (4:1-13).

Kleyer et al. further teaches that the above components are mixed then cured, yielding conductive silicone rubber compositions (table 1 and examples 1-16). Kleyer et al. does not explicitly teach that the silver flakes are first treated with the phenolic oxidation inhibitor, yielding surface-modified silver flakes. However, it is implicit that the phenolic oxidation inhibitor, which is present along with the other starting materials (A) and (B) will interact with the silver flakes, forming a silver surface-treated composition. Support for this is found in Table 1 of Kleyer et al. which teaches that those compositions not having a phenolic additive (comparative examples 1 and 2 of Table 1) exhibited a marked increase in contact resistance than those samples which contained the phenolic additive (examples 11-13 of table 1). The contact resistance values are directly linked to the silver flakes present in the composition. A two- to three-fold reduction in contact resistance when a phenolic additive is present implies that the silver flakes have interacted with the phenolic additive, causing the significant reduction in resistance.

While Kleyer et al. does not explicitly teach that the hydroxy-functional organic compound is an oxidation inhibitor, it nevertheless follows that these materials are inherently capable of serving as oxidation inhibitors.

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Claim 10: Kleyer et al. further teaches that the silicone compositions are useful as electroconductive coatings (2:10-16).

Claim 17: Kleyer et al. further teaches that the amount of phenolic additive is from 0.1 to 3 percent by weight, based on the total weight of the composition (7:4-30). Since the silver flakes can account for the majority of the total weight of the composition, it inherently follows that the amount of phenolic additive falls into the claimed range of instant claim 17.

Claim 18: Kleyer et al. further teaches that the amount of electrically conductive filler can be present up to 80% by volume, based on the entire volume of the silicone composition, which partially encompasses the claimed range of instant claim 18.

Claim 19: Kleyer et al. does not teach that the silver-based powder is surface-treated with an oxidation inhibitor/hydroxy-functional organic compound prior to introduction into the composition. However, the courts have stated that the selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results; *In re Burhans*, 154 F.2d 690 USPQ 330 (CCPA 1946) see also *In re Gibson*, 39 F.2d 975, 5 USPQ 230 (CCPA 1930) (Selection of any order of mixing ingredients if *prima facie* obvious).

### ***Response to Arguments***

The 112 rejections cited in the previous Office action have been overcome.

The 102(b) prior art rejections cited in the previous Office action no longer apply due to Applicant's cancellation of claims 1, 2 and 11-12.

The 103(a) prior art rejection of Ogawa et al. in view of Kazumi et al., cited in the previous Office action no longer apply due to Applicant's cancellation of claims 3, 4 and 14-16.

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Applicant's arguments with respect to the prior art 103(a) rejection of Kleyer et al. (claims 5-10 and 17-19) have been fully considered but they are not persuasive. Applicants argue that the compositions taught by Kleyer et al. do not anticipate nor render obvious the instant claims. Applicant's allege that the presence of the other ingredients, specifically, the polysiloxanes, would effectively impede the surface treatment of the silver flakes. However, this statement is only an allegation as no data is provided which supports this statement. Further, Applicant's have not defined what is meant by surface treatment. It is the position of the Examiner that the mere mixing of an oxidation inhibitor (plus other ingredients) with a silver-based powder would result in some level of interaction between the silver particles and the oxidation inhibitor. Further, as cited above, Kleyer et al. provides a comparison in the contact resistance and volume resistivity values for compositions having a hydroxy-functional organic compound additive/oxidation inhibitor (examples 11-13 of Table 1), and those which have no such additive (comparative example 1 of Table 1). Indeed the contact resistance is shown to be two orders of magnitude higher without the presence of the hydroxy-functional organic compound additive/oxidation inhibitor. This represents the only difference between the composition of the comparative example and examples 9-11. Thus it is clear that the presence of the hydroxy-functional organic compound additive/oxidation inhibitor is the key ingredient in modulating the contact resistance parameter. Such a parameter is governed almost entirely by the silver flakes. The fact that the contact resistance is greatly reduced when in the presence of the hydroxy-functional organic compound additive/oxidation inhibitor strongly suggests some modification of the silver flakes in some way due to the addition of the hydroxy-functional organic compound additive/oxidation inhibitor. Also, applicants' claims contain the transitional

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phrase “comprising” which means that such polysiloxane components are not excluded by the claims.

Last, if Applicant's allegation that the oxidation inhibitor would **not** treat the silver flakes owing to the presence of the polysiloxanes is correct, this suggests that the silver flakes have a stronger affinity for the polysiloxanes and not for the hydroxy-functional organic compound additive/oxidation inhibitor. If this is indeed the case, then pretreating the silver flakes with the oxidation inhibitor prior to mixing with the polysiloxane would not be expected to have a significant difference in the properties as compared so a composition in which all ingredients were blended at the same time. Stated differently, if the polysiloxanes have a greater affinity for the silver flakes than the oxidation inhibitor, they would ultimately displace the oxidation inhibitor from the silver surface resulting in a composition in which the silver flakes have been treated with the polysiloxane components.

Applicants further argue that because the silver flakes as taught by Kleyer et al. have some lubricant chemisorbed on the metal surface, this would preclude any surface treatment by the organic compound additive/oxidation inhibitor. Further, Applicants argue that Kleyer et al. teaches that the silver flakes may be treated or untreated which indicates that Kleyer et al. is not concerned with pretreating the silver with the hydroxy-functional organic compound additive/oxidation inhibitors. However, in some embodiments of Kleyer et al., the silver flakes are **not** surface treated. The presence of **some** lubricant which **may** be present on the surface of the silver flakes does not preclude the reaction/surface treatment between the hydroxy-functional organic compound additive/oxidation inhibitors. The fact that Kleyer et al. teaches that untreated silver flakes may be employed in the composition does not translate into compositions in which

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comprise untreated silver flakes. The mere mixing of the ingredients of Kleyer et al. with untreated silver flakes results in surface-treatment of the silver flakes in the final composition. So Kleyer et al. implicitly teaches surface-treating the silver flakes.

Applicants are encouraged to show that pretreatment of the silver flakes with the oxidation inhibitor in the compositions taught in the instant specification provide superior and unexpected results when compared to analogous compositions in which the silver flakes and remaining ingredients (including the oxidation inhibitor) are merely mixed together. Such a showing could overcome the Kleyer et al. rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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*Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Loewe whose telephone number is (571)270-3298. The examiner can normally be reached on Monday through Friday from 5:30 AM to 3:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. L./  
Examiner, Art Unit 1796  
13-May-08

/Randy Gulakowski/  
Supervisory Patent Examiner, Art Unit 1796